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U. S. DEPT. OF AGRICULTURE
NATIONAL WATER AND SOIL SURVEY

OCT 21 1970

CURRENT SERIAL RECORDS

FALL WATER SUPPLY SUMMARY FOR NEVADA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

UNITED STATES DEPARTMENT of AGRICULTURE - SOIL CONSERVATION SERVICE.
and

NEVADA DEPARTMENT of CONSERVATION and NATURAL RESOURCES
DIVISION of WATER RESOURCES

Data included in this report were obtained by the agencies named above
in cooperation with Federal, State and private organizations listed on
the last page of this report.

AS OF
OCT. 1, 1970

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Building, Salt Lake City, Utah 84111
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 340, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES.

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia.



WATER SUPPLY OUTLOOK FOR NEVADA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

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WATER SUPPLY OUTLOOK FOR NEVADA

FALL SUMMARY - OCTOBER 1, 1970

NEVADA'S 1970 WATER SUPPLY WAS VERY SATISFACTORY. MOST IRRIGATORS SERVED BY ONE OF NEVADA'S MAJOR RIVER SYSTEMS RECEIVED NORMAL TO ABOVE-NORMAL IRRIGATION SUPPLY. MANY USERS IRRIGATED ADDITIONAL ACREAGE THIS YEAR, DUE TO THE ABUNDANT RESERVOIR STORAGE LAST SPRING. FALL CARRYOVER STORAGE IN NEVADA'S RESERVOIRS REMAINS EXCELLENT AT THIS TIME. AS PREDICTED, STREAMS DID NOT HAVE EXCESSIVE PEAK FLOWS, AND ADEQUATE VOLUMES FOR IRRIGATION WERE MAINTAINED THROUGH THE SUMMER SEASON.

Humboldt Basin streams produced excellent streamflow amounts, with most streams flowing 25 to 40 percent more than normal. In addition to the above-average volume flows, the streams produced consistently throughout the irrigation season. Nevada streams originating in the Sierra generally had near-average flows this summer. The Truckee River system produced 10 to 20 percent less-than-average flow, while the Carson River flow was 5 to 10 percent greater than normal. The flow in the East Walker and West Walker Rivers was generally 10 percent less than average.

Nevada reservoir storage was near capacity at the start of this irrigation season, and proved to be an excellent supplement to many users. Most of the heavily irrigated areas still have water at this writing, and limited usage is planned until about mid-November. Due to abundant water being available this past summer, irrigators planted additional acreage in many areas of the state.

There is more than 150 percent of average carryover storage at this time. Water held in Lake Tahoe, Lahontan and Rye Patch reservoirs is much above the normal for this date. This stored water will give water users some assurance of a good supply next season.

Fall soil moisture readings vary widely throughout the state. The Sierra Nevada Range is very dry. This situation is particularly noticeable in the Lake Tahoe and Truckee drainages. Parts of the Humboldt drainage have had recent thunderstorm activity and have near-average soil moisture conditions.



APRIL-JULY 1970
NEVADA STREAMFLOW FORECASTS
and
OBSERVED STREAMFLOW

The following table contains April-July forecasts made during the past winter. Observed streamflow quantities are provisional and were furnished by the U. S. Geological Survey and other agencies.

FORECAST STREAMS	April-July Streamflow, Thousand Acre-Feet							
	Forecast				Observed		Observed	
	Feb.	Mar.	Apr.	May	1970	1970	1970	1970
	1	1	1	1	1970	Average 1953-67	as % 15-Yr. Av.	
Owyhee near Gold Creek, Nevada ¹	25	18	18	22	NA	16	-	
Owyhee near Owyhee, Nevada ¹	90	69	73	66	87	60	145	
Lamoille Creek near Lamoille, Nev.		23	24	30	33	25	132	
S. Fork Humboldt near Elko, Nev.		65	56	55	77	58	132	
Marys River above Hot Springs, Nevada		32	34	32	40	28	142	
N. Fork Humboldt at Devils Gate, Nevada		22	28	26	35	26	134	
Humboldt at Palisade, Nevada	200	200	177	162	218	154	141	
Humboldt at Comus, Nevada		140	130	115	138	110	125	
Martin Creek near Paradise, Nevada		17	17	14	19	14	135	
E. Walker near Bridgeport, Calif. ²		65	60	57	53	60	88	
W. Walker below Little Walker near Coleville, California		160	150	136	133	143	93	
E. Carson near Gardnerville, Nev.	160	179	160	159	185	175	105	
E. Carson near Gardnerville, Nev. (Date of 200 c.f.s. flow)		7/18	7/18	7/25	7/24	7/23		
W. Carson at Woodfords, Calif.		55	51	53	54	51	105	
Carson near Carson City, Nevada		170	153	154	188	166	113	
Carson near Ft. Churchill, Nevada ¹		153	135	162	155	150	103	
Little Truckee above Boca, Calif. ¹		72	65	64	67	81	82	
Truckee at Farad, California ¹		255	210	207	196	258	75	
Lake Tahoe ³		1.50	1.20	1.12	1.31	1.39	94	

1. Corrected for storage above station.
2. April-August flow, corrected for storage.
3. Maximum rise, in feet, from April 1, assuming gates closed.

NA Not available at this time.

NEVADA

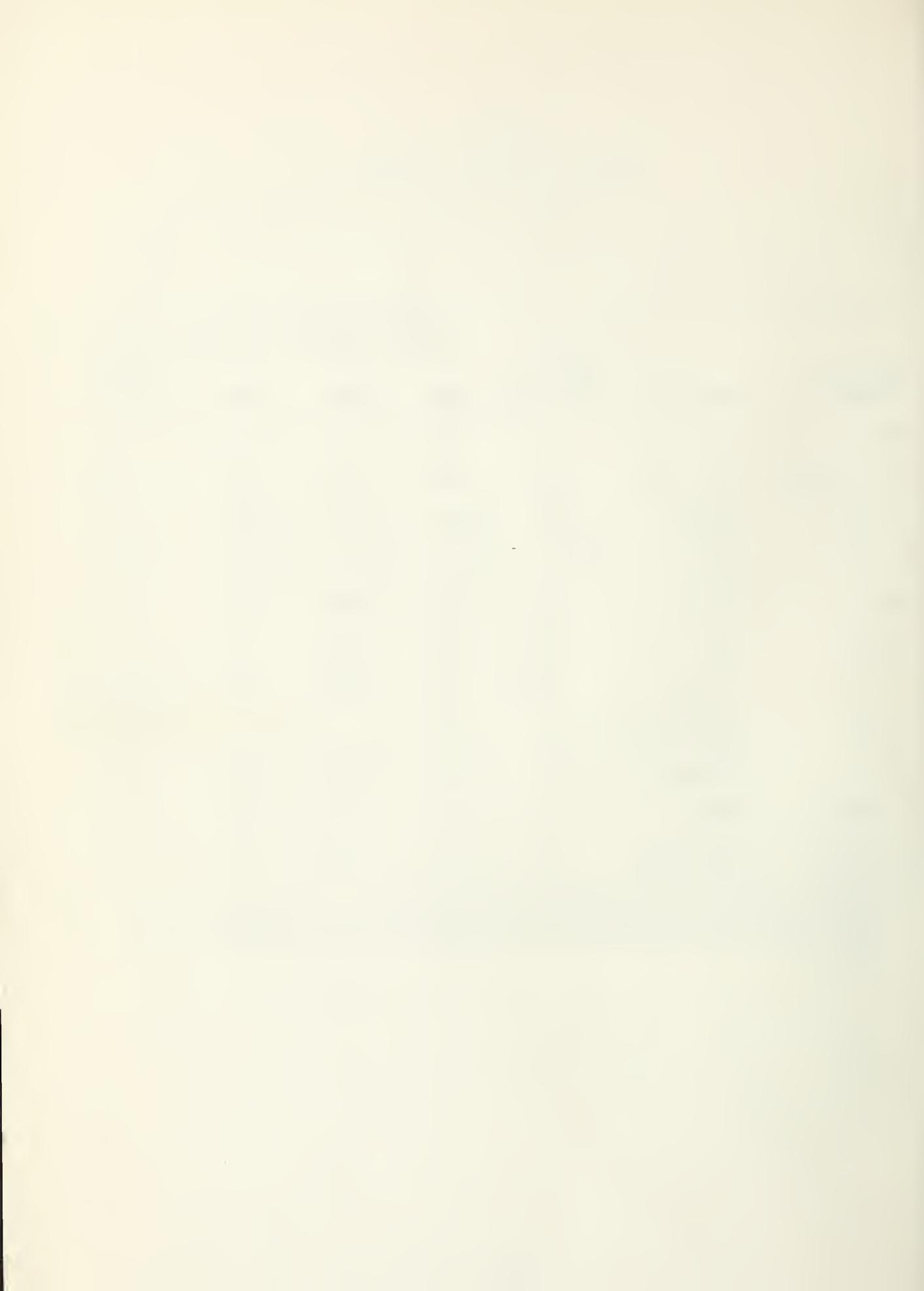
STATUS OF RESERVOIR STORAGE

October 1, 1970

BASIN and Stream	RESERVOIR	USABLE CAPACITY (1000 AF)	USABLE STORAGE - 1000 ACRE-FEET			
			1970	1969	1968	15-YR. AVERAGE 1953-67
Owyhee	Wild Horse	72	34	8	0 *	12
Lower Humboldt	Rye Patch	179	161	170	17	58
Colorado	Mohave	1,810	1,376	1,436	1,393	1,413
Colorado	Mead	27,217	16,769	16,135	15,018	16,905
Tahoe	Tahoe	732	536	580	514	436
Truckee	Boca	41	27	22	13	10
Truckee	Prosser	29 **	16	20	12	Storage began 1/30/63
Truckee	Stampede	220	88	-	-	Storage began 8/1/69
Carson	Lahontan	286	144	165	90	109
West Walker	Topaz	59	19	32	8	17
East Walker	Bridgeport	42	15	22	7	14

* Reservoir drained during summer for construction.

** Flood control use allocation of 20,000 acre-feet between November 1 and April 10.



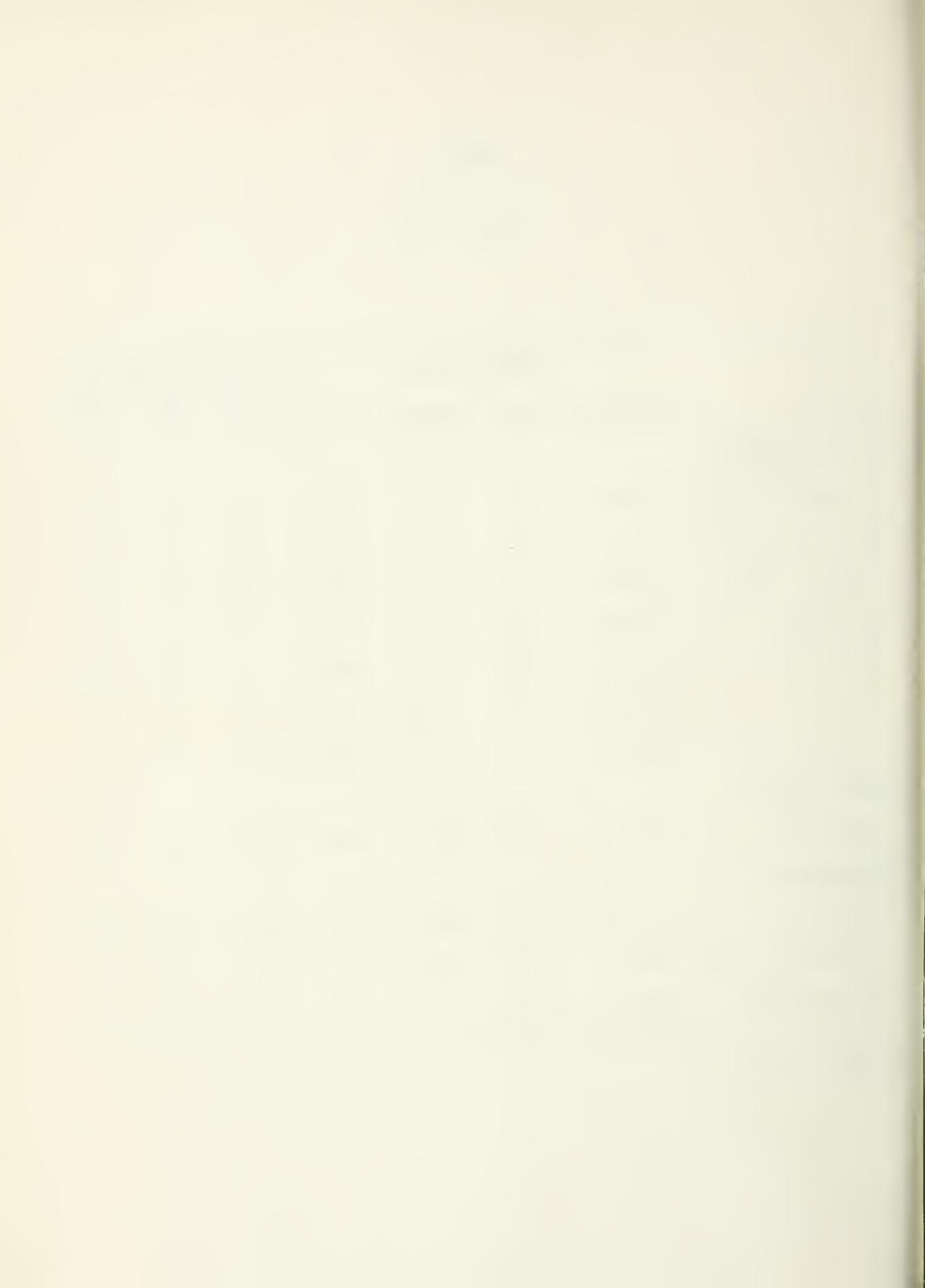
NEVADA

SOIL MOISTURE

October 1, 1970

STATION	Elevation	PROFILE (Inches)		Date	SOIL MOISTURE (Inches)		
		Depth	Capacity		This Year	Last Year	2 Years Ago
<u>EAST SLOPE SIERRA</u>							
Independence Camp	7000	34	6.10	9/03	1.8	1.8	3.4
Hagans Meadow	8000	36	3.65	9/10	1.3	1.7	0.0
Marlette Lake	8000	50	3.70	9/16	1.5	0.4	0.6
Truckee #2	6400	18	3.65	9/21	1.1	0.6	0.0
Ward Creek	7000	49	5.80	9/21	1.7	0.7	0.6
Sonora Pass	8800	48	8.30	9/29	2.8	2.8	NS
Virginia Lake ¹	9200	40	5.00	9/28	1.4	0.8	-
<u>HUMBOLDT BASIN</u>							
Rodeo Flat	6800	42	11.00	9/18	5.9	8.3	10.5
<u>OWYHEE BASIN</u>							
Big Bend	6700	48	16.70	9/18	9.2	13.4	15.8
Jack Creek, Lower	6800	48	8.70	9/21	6.4	6.4	7.8
Taylor Canyon	6200	48	15.00	9/21	8.0	9.5	12.6

1. New location
 NS Not surveyed



Agencies Cooperating in Collecting Data Contained in this Bulletin

FEDERAL

Agricultural Research Service
Army
Bureau of Reclamation
Fish and Wildlife Service
Forest Service
Geological Survey
Navy
Soil Conservation Service
U.S. District Court - Federal Water Master
Weather Bureau

STATE

California Cooperative Snow Surveys
California Department of Parks and Recreation
California Department of Water Resources
Colorado River Commission of Nevada
Idaho Cooperative Snow Surveys
Nevada Association of Soil Conservation Districts
Nevada Cooperative Snow Surveys
Nevada Department of Conservation & Natural Resources
Division of Water Resources
Nevada State Forester-Firewarden
Oregon Cooperative Snow Surveys
University of Nevada
Utah Cooperative Snow Surveys
White Mountain Research Station, Univ. of California

PRIVATE

Amalgamated Sugar Company
Kennebott Copper Corporation
Nevada Irrigation District
Owyhee Project North Board of Control
Owyhee Project South Board of Control
Pacific Gas & Electric Company
Pershing County Water Conservation District
Sierra Pacific Power Company
Squaw Valley Development Company
Truckee-Carson Irrigation District
Walker River Irrigation District
Washoe County Water Conservation District

Other organizations and individuals furnish valuable information for the snow survey reports. Their Cooperation is gratefully acknowledged.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
P.O. Box 4850
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water supply for irrigation,
domestic and municipal water
supply, hydro-electric power
generation, navigation,
mining and industry

*"The Conservation of Water begins
with the Snow Survey"*